



Atmospheric environment zone		I		II		III		IV		V	
Environmental factors		Measured value	Evaluation point	Measured value	Evaluation point	Measured value	Evaluation point	Measured value	Evaluation point	Measured value	Evaluation point
Temperature (°C)	A	≤20	1	≤25	2	≤30	4	≤35	8	≤35	12
Relative humidity (%RH)	B	≤60	1	≤65	6	≤70	12	≤80	24	≤80	36
Corrosive gas (mdd)	SO ₂	≤0.02	1	≤0.05	4	≤0.2	8	≤0.5	16	≤0.5	24
	H ₂ S	≤0.02	1	≤0.05	6	≤0.2	12	≤0.5	24	≤0.5	36
	NO ₂	≤0.02	1	≤0.05	3	≤0.2	6	≤0.5	12	≤0.5	18
	Cl ⁻	≤0.02	1	≤0.05	7	≤0.2	14	≤0.5	28	≤0.5	42
	NH ₃	≤0.02	1	≤0.1	3	≤1.0	6	≤10	12	≤10	18
Sea salt particle	Sea salt particle (mdd)	≤0.01	1	≤0.03	5	≤0.1	10	≤0.3	20	≤0.3	30
	Distance from coast (km)	>2.0		≥1.5		≥1.0		≥0.5		<0.5	

FIG.2

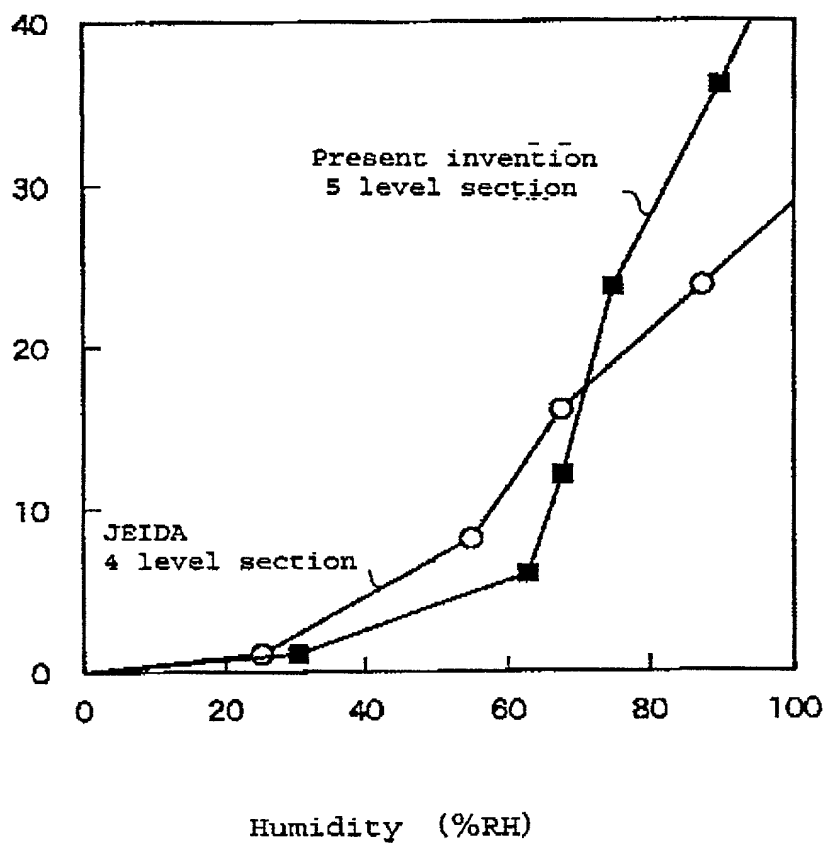


FIG. 3

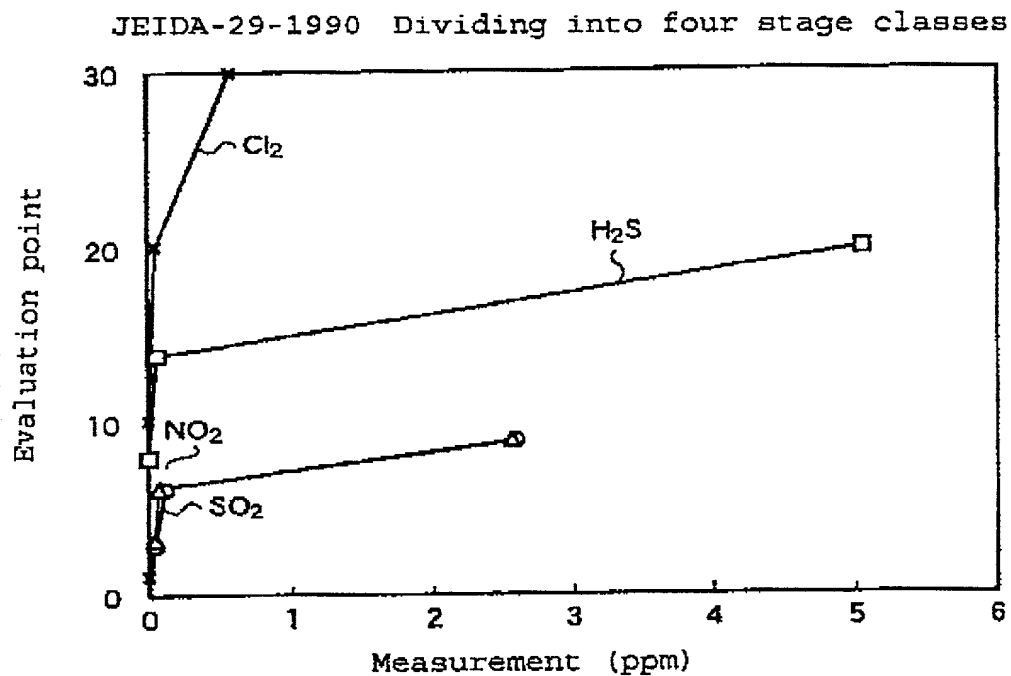


FIG. 4 A

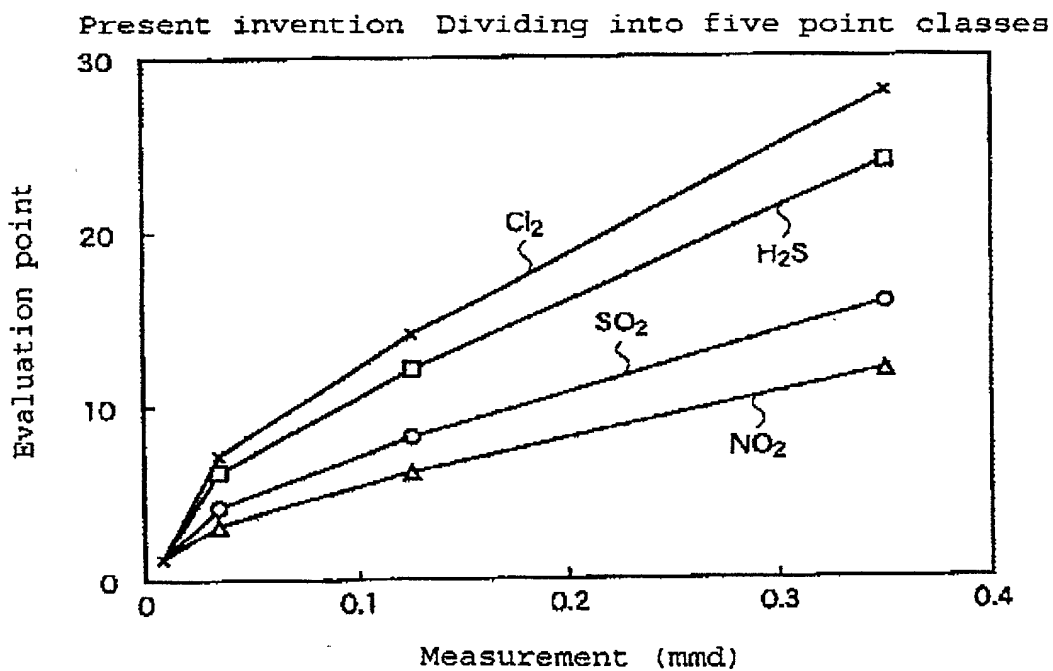


FIG. 4 B

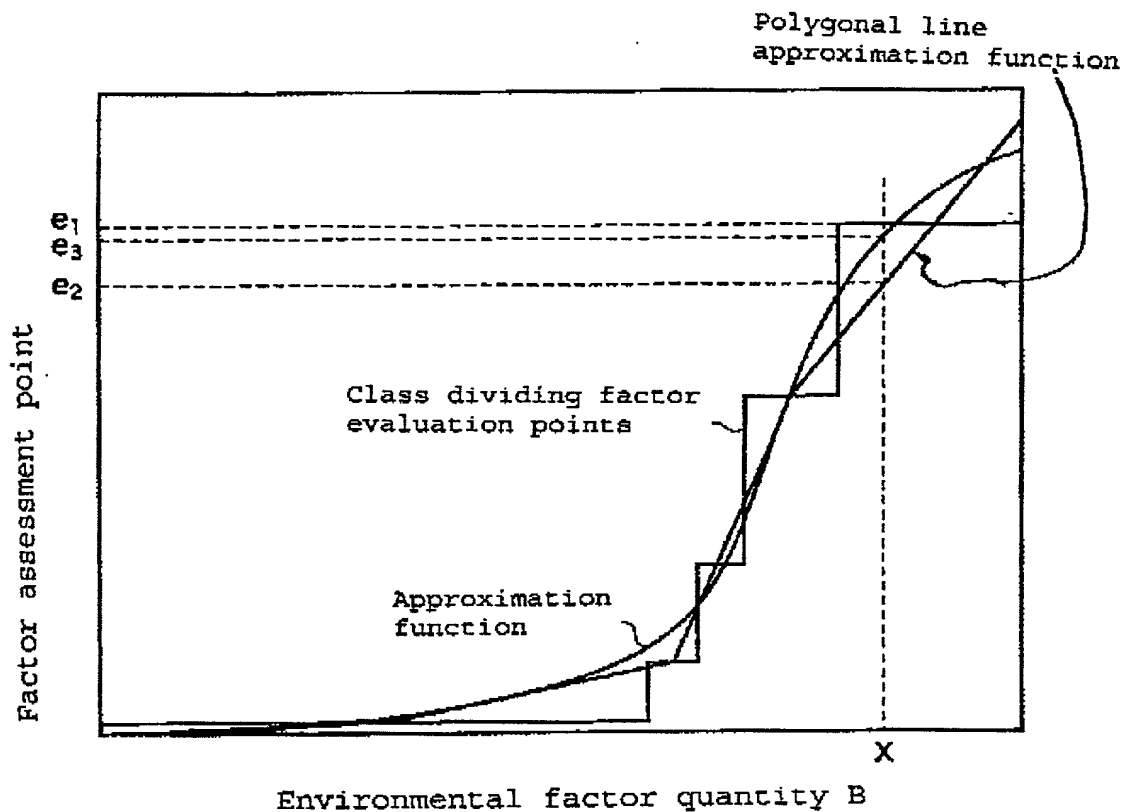


FIG. 5

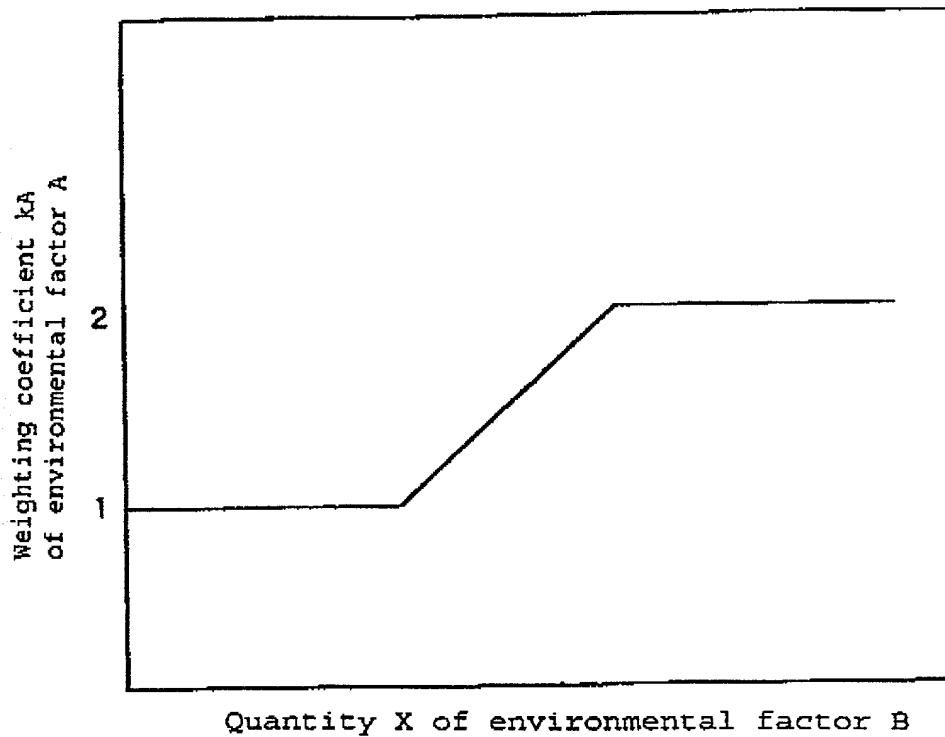


FIG. 6

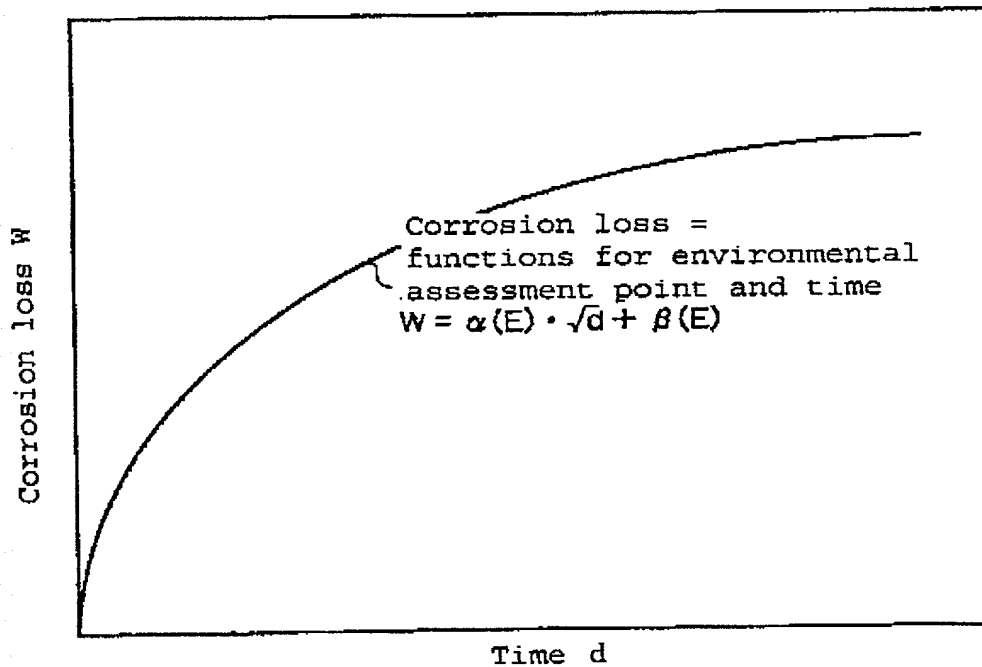


FIG. 7

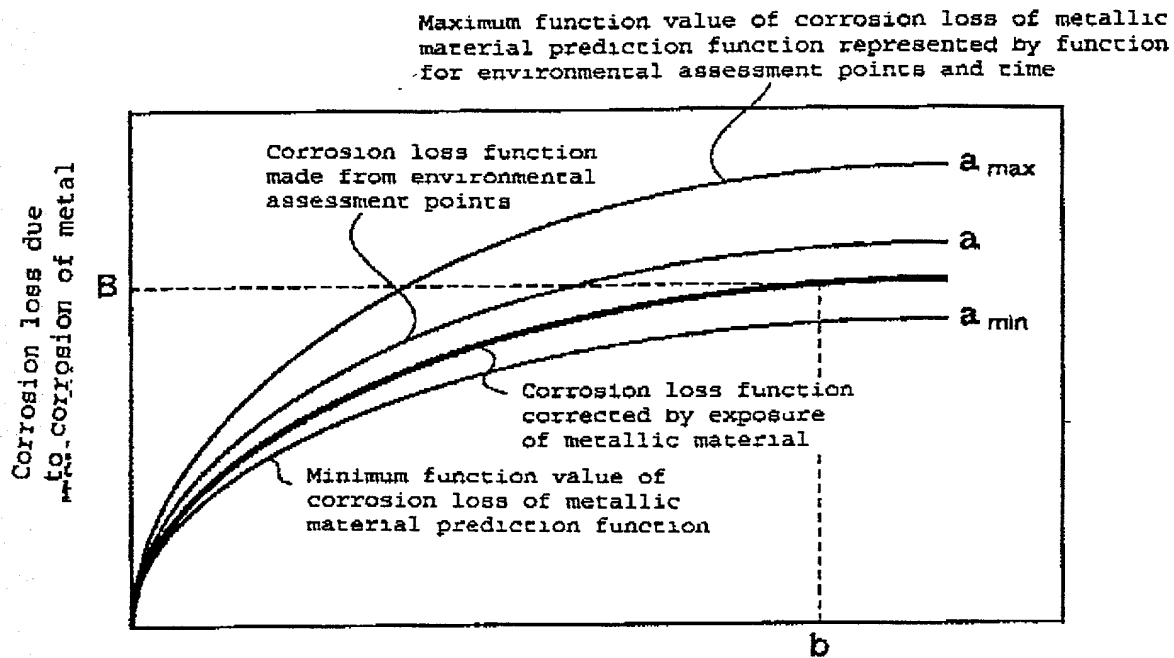


FIG. 8

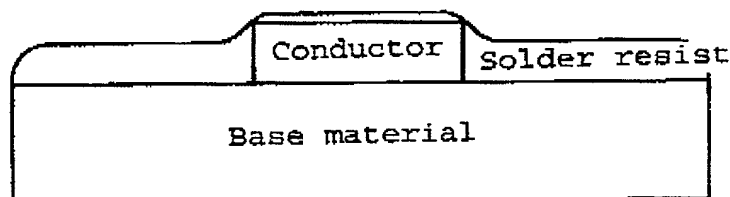
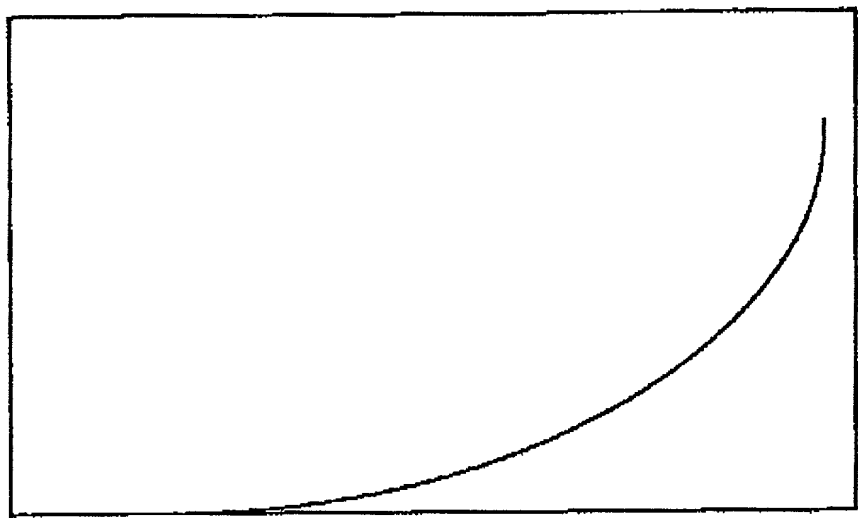


FIG. 9

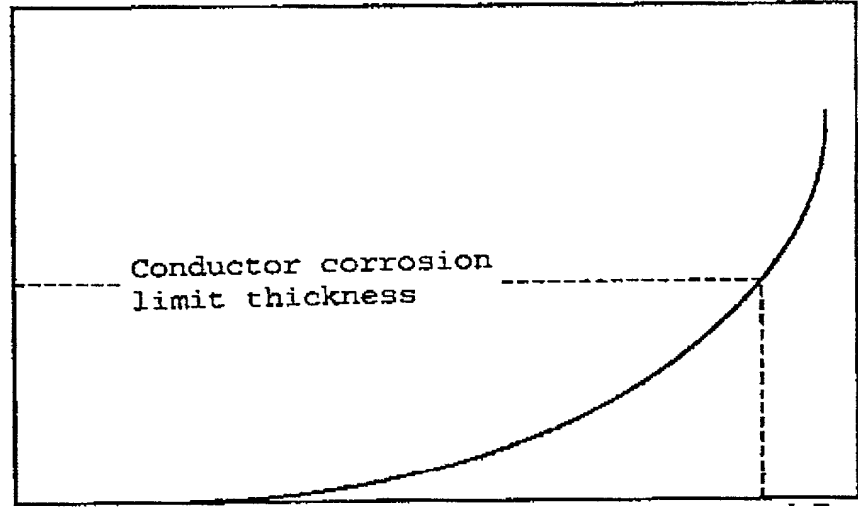
Thickness of corrosion of a conductor



Amount of corroded copper

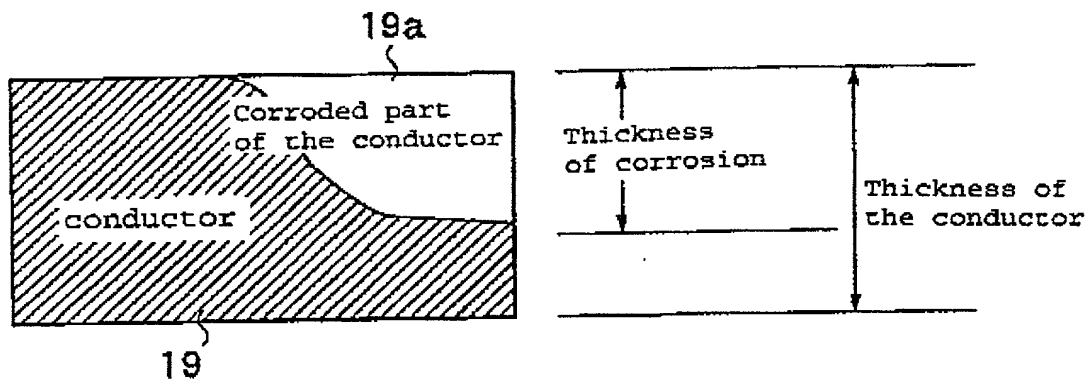
FIG. 1 O A

Thickness of corrosion of a conductor



Amount of corroded copper Limit for an amount of corrosion

FIG. 1 O B



Corrosion loss rate = (thickness
of corrosion / thickness of the conductor) $\times 100$

FIG. 1 1

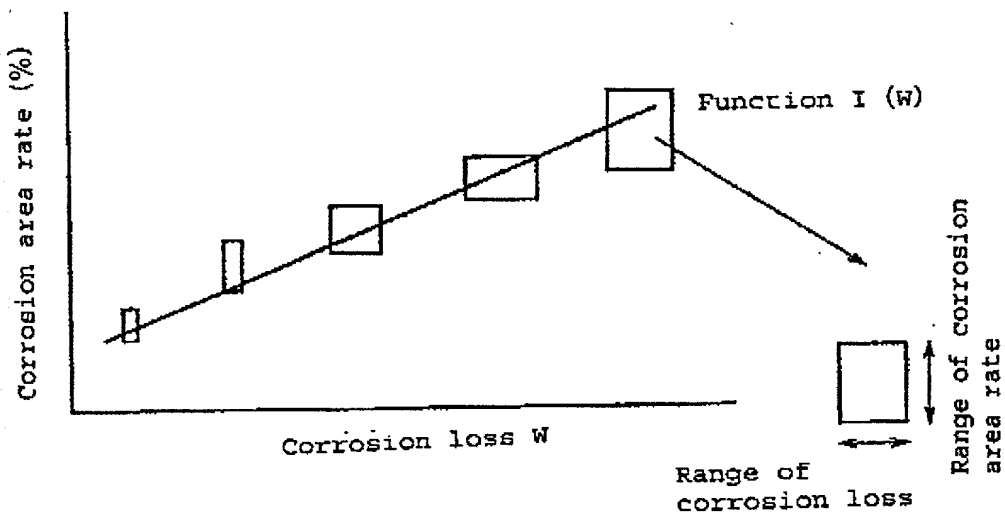


FIG. 1 2

IC type	Year	Manufacturer	Sealing resin	Chip protective film	Other...	Correlation function I(W)
IC1	1982	T Inc.	Epoxy blend - - -	PSG		I ₁ (W)
IC2	1979	N Inc.	Epoxy blend - - -	None		I ₂ (W)
IC3	1992	H Inc.	Polyimide blend - - -	SiN		I ₃ (W)
...

FIG. 13

IC type	Year	Manufacturer	Sealing resin	Chip protective film	Other...	Change of time sequence of aluminium wiring corrosion area rate $U_i = h_i(t)$ Correlation function $F(u)$ of aluminium wiring corrosion area rate and faults
IC1	1982	T Inc.	Epoxy blend - - -	PSG		$U_1 = m_1(t), F_1 = n_1(u)$
IC2	1979	N Inc.	Epoxy blend - - -	None		$U_2 = m_2(t), F_2 = n_2(u)$
IC3	1992	H Inc.	Polyimide blend - - -	SiN		$U_3 = m_3(t), F_3 = n_3(u)$
...

FIG. 14

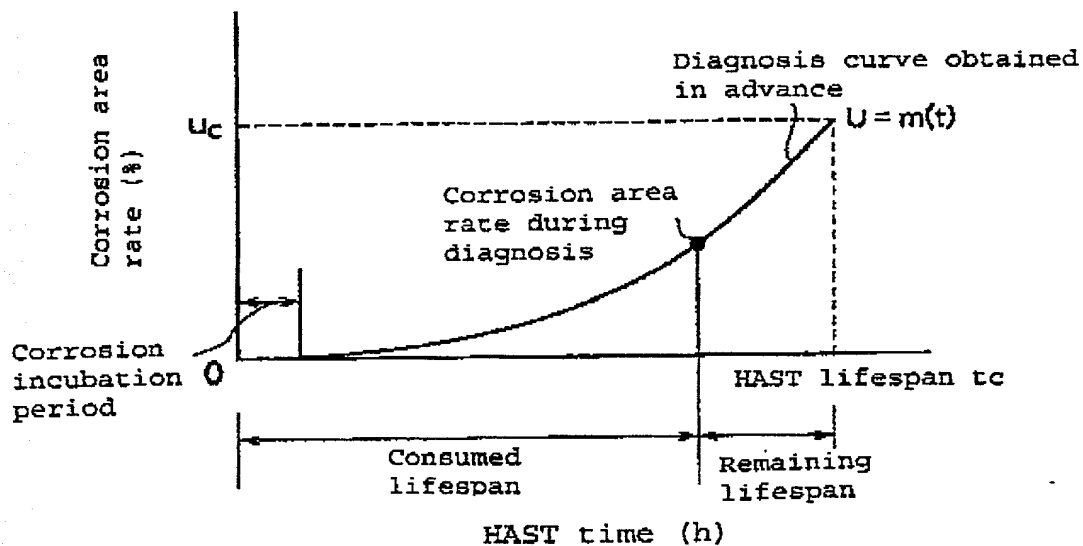


FIG. 1 5

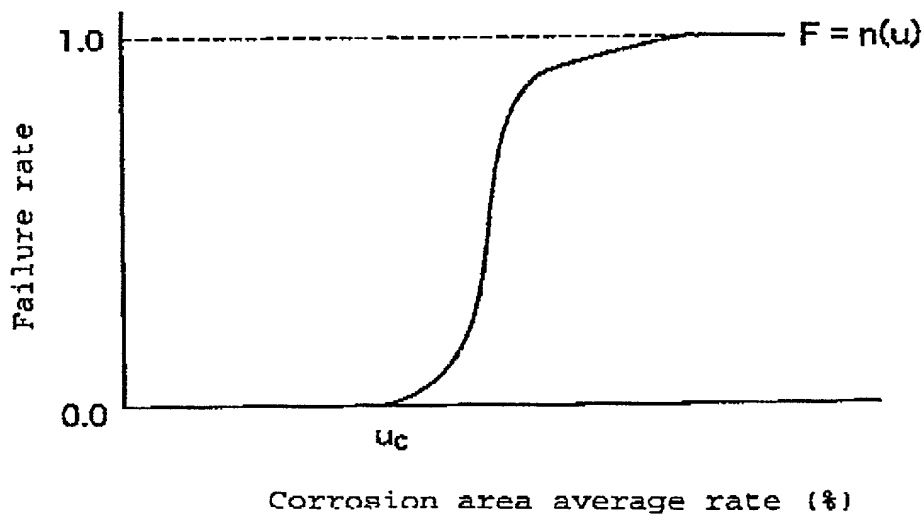


FIG. 1 6

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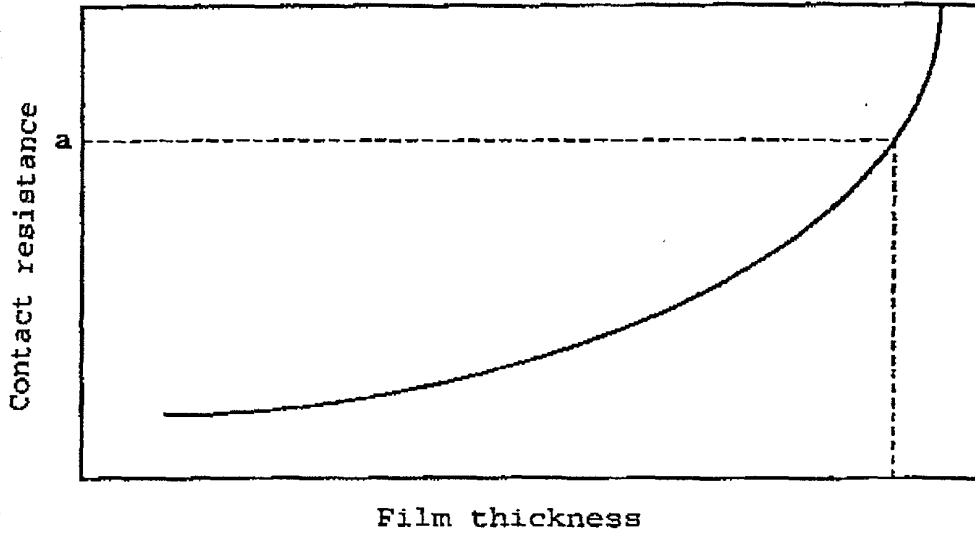


FIG. 1 7

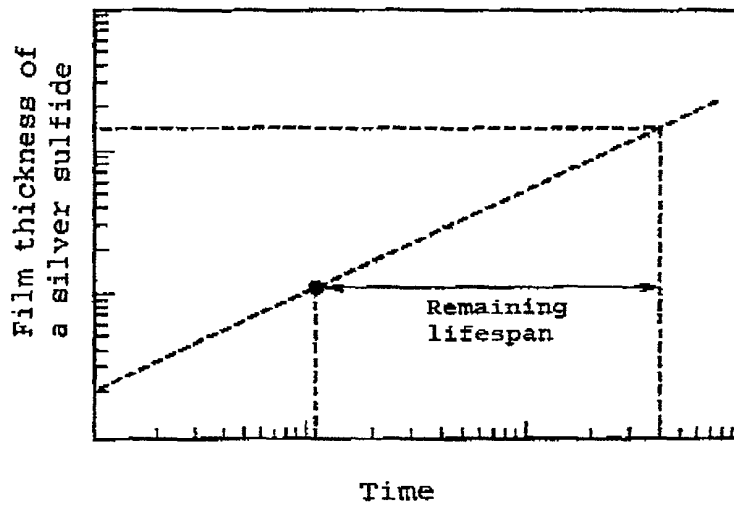


FIG. 1 8

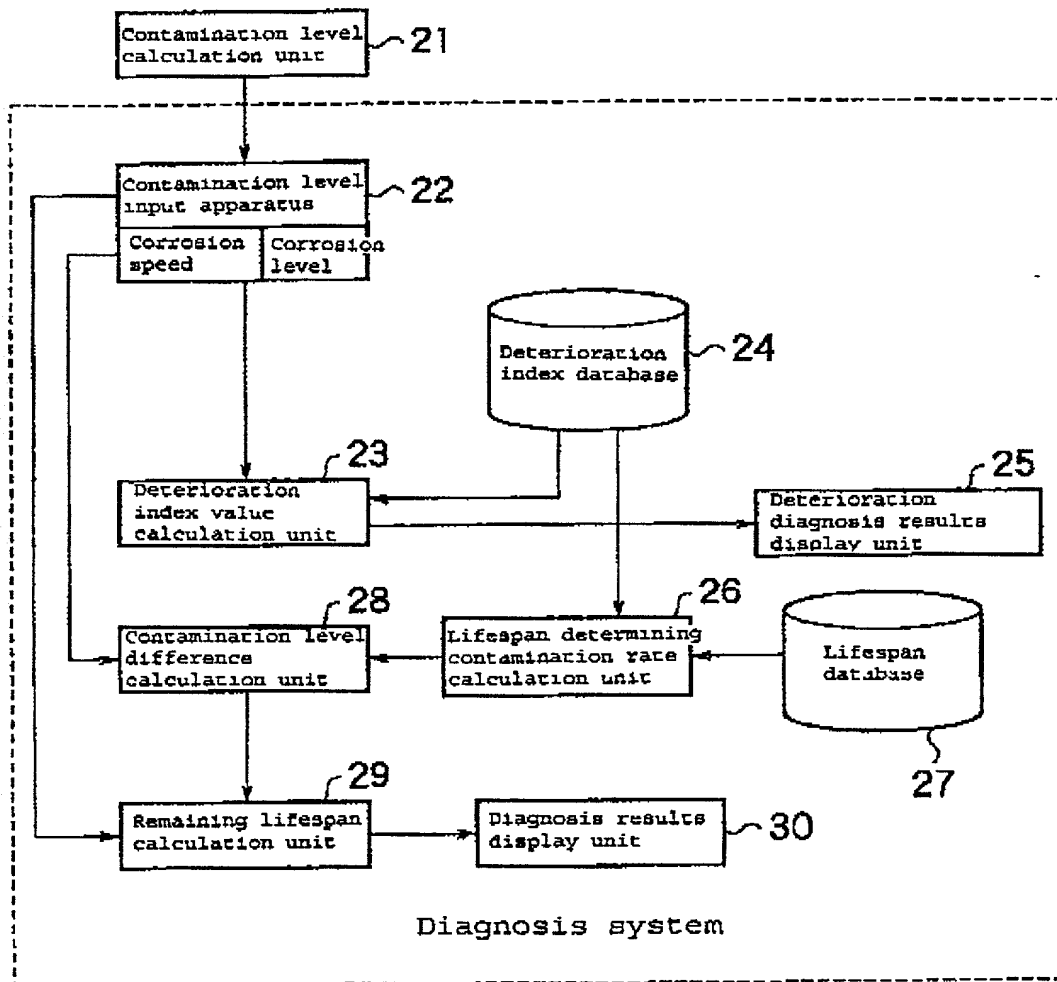


FIG. 19

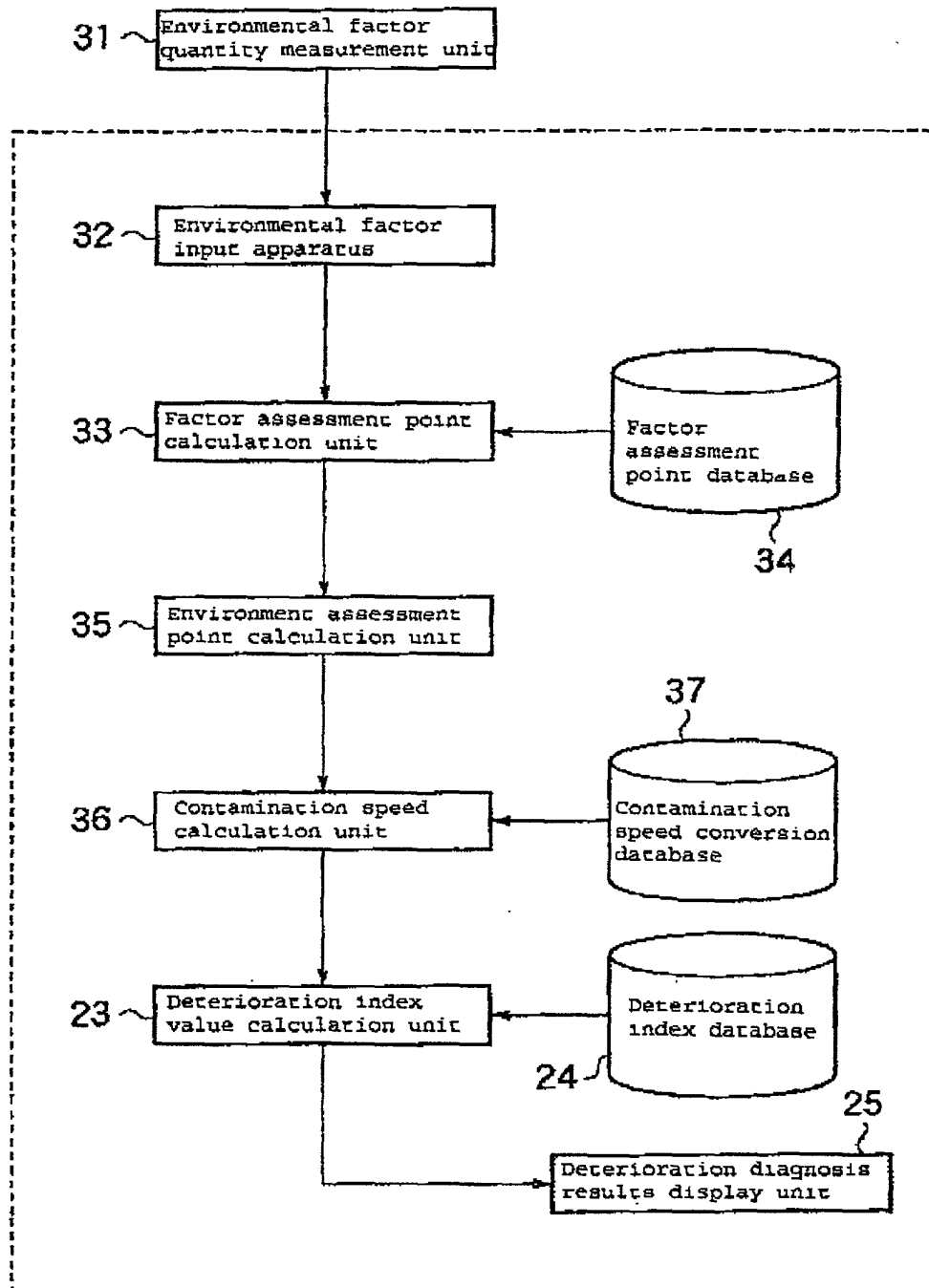


FIG. 20

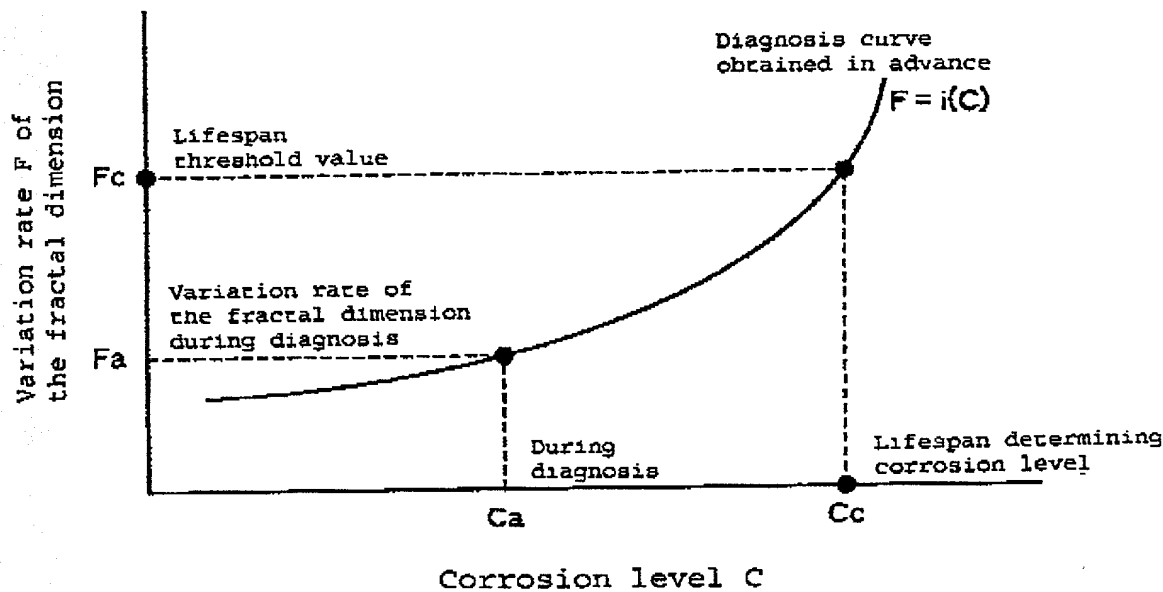


FIG. 2 1

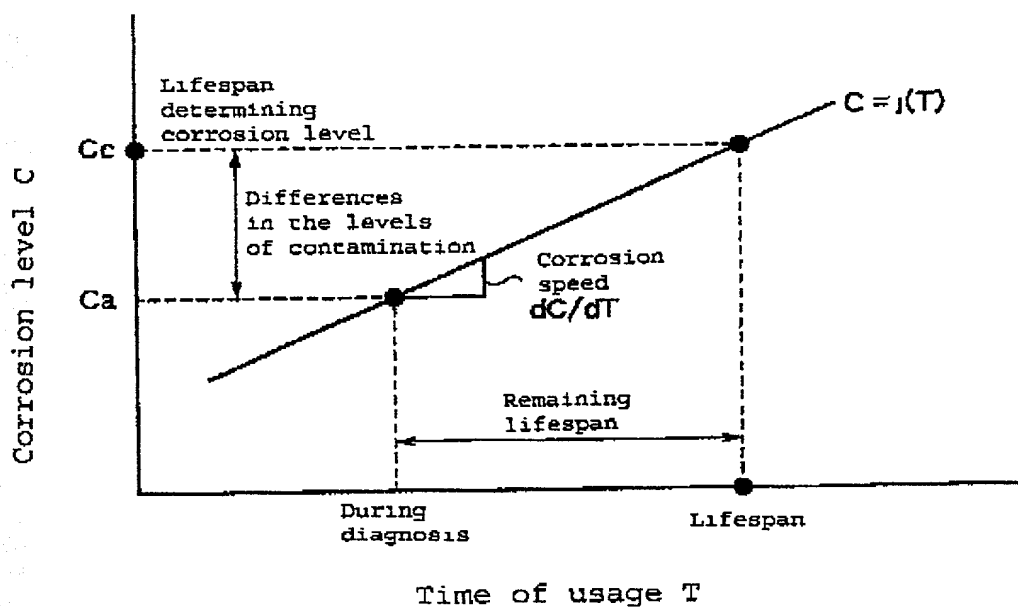


FIG. 2 2

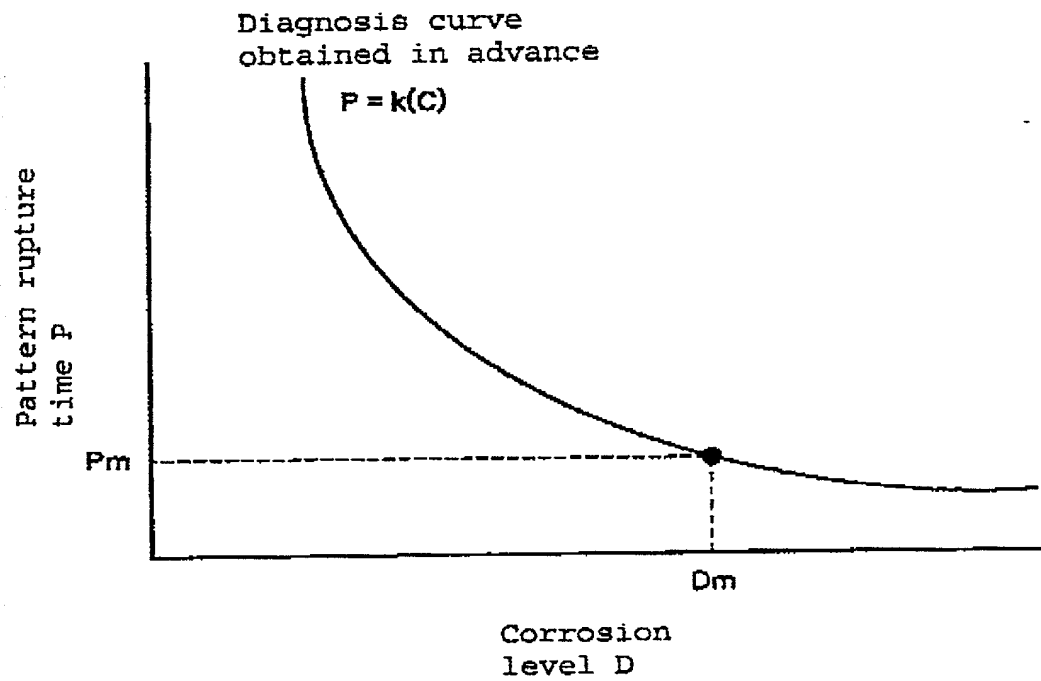


FIG. 2 3

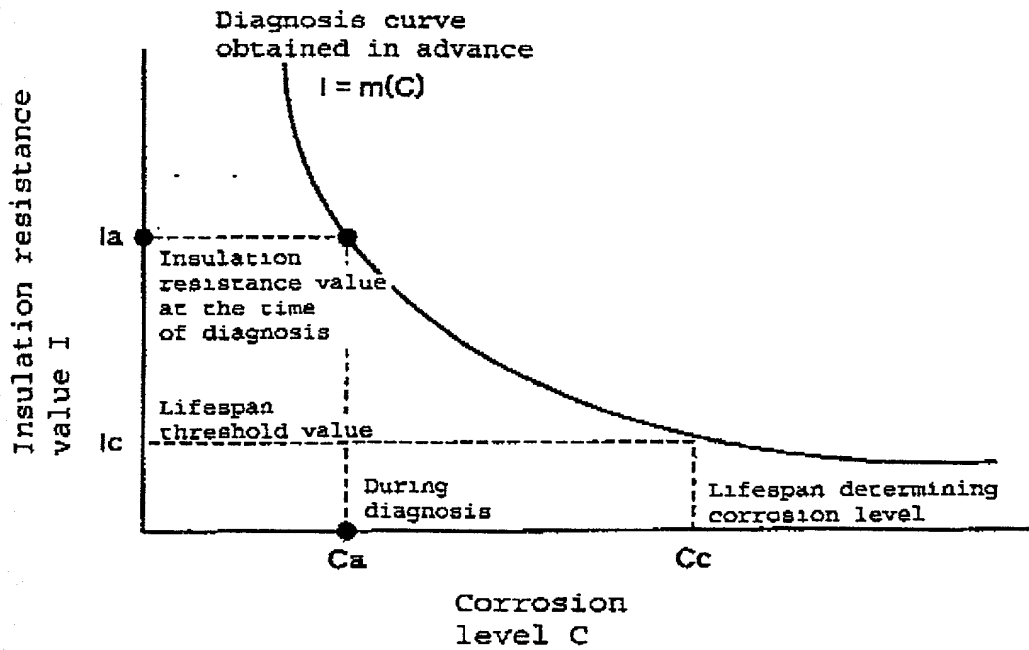


FIG. 2 4

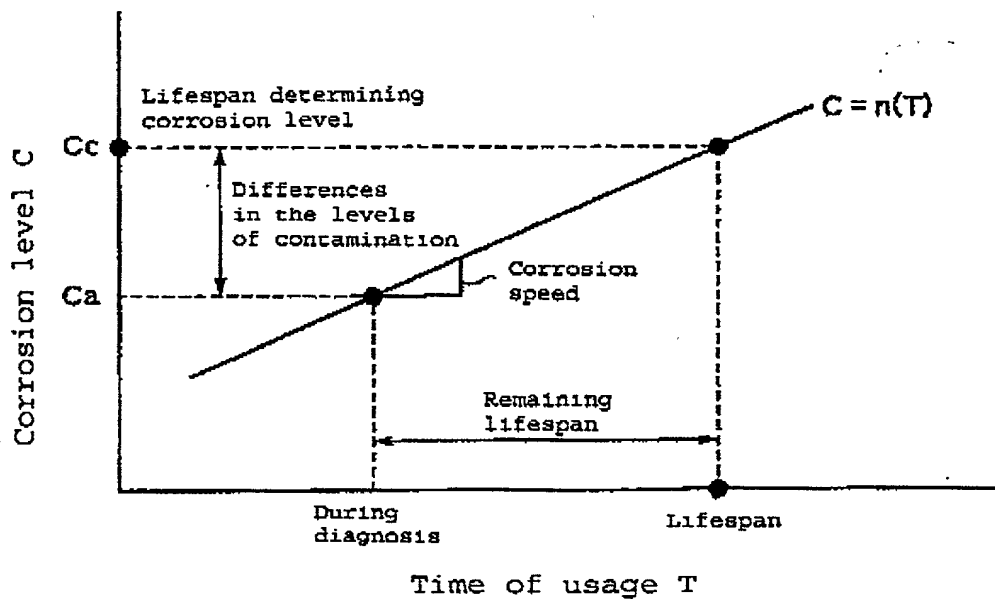


FIG. 2 5